	Application No.	Applicant(s)	
Notice of Allowability	09/801,795	MATICHUK, BRUCE	
	Examiner	Art Unit	
	Joseph P. Hirl	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *February 21, 2007.*

2. ☒ The allowed claim(s) is/are *1-12 and 14-24*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *May 7, 2007* .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

JOSEPH P HIRL
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100

Examiner's Amendment/Reasons for Allowance\

1.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the

application.

1.   (Previously presented) A computer system computer application screen

fingerprinter, said computer system comprising:

a processor;

a computer memory coupled to said processor; and

a screen fingerprinter stored in said computer memory, wherein said fingerprinter

comprises a decision tree that selects at least one region and/or pattern of screens of a

presentation space of a computer application to be captured such that an occurrence of the at

least one region and/or pattern enables the decision tree to uniquely identify each of the

screens.

2.   (Original) A computer system as in claim 1, wherein said fingerprinter allows

a user to modify which portion of a screen comprises said region and/or pattern and which

attributes of said region and/or pattern to examine.

3.   (Previously presented) A computer system as in claim 1, wherein said

fingerprinter creates the decision tree based on said at least one region and/or pattern such

that after each screen is compared to the region or pattern at each decision node, a screen

identifier will come to a different end node of said decision tree for each screen.

4.   (Original) A computer system as in claim 3, wherein said fingerprinter allows

a user to modify said decision tree by modifying the comparisons at the decision nodes.

5.   (Previously presented) A computer system computer application recorder,

said computer system comprising: a processor; a computer memory coupled to said

processor; a user interface and a recorder stored in said computer memory, wherein said

recorder records in said computer memory a knowledge base which comprises each screen of

the presentation layer of a computer application, the keystrokes and/or programs necessary to

reach each state, the available actions from each state of each screen and the effect of any

actions available in each state through navigating said computer application in said user

interface.

6.   (Original) A computer system as in claim 5, wherein said processor generates

said file while a user navigates said another computer system in said user interface.

7.   (Original) A computer system as in claim 5, wherein said processor generates

said file while automatically navigating said another computer system.

8.   (Previously presented) A computer system as in claim 5, wherein a

fingerprint of each screen is included in said knowledge base.

9.   (Previously presented)   A computer system as in claim 5, wherein pre-conditions and post-conditions for each state are included in said knowledge base.

10.   (Original)   A computer system navigation planner, said computer system comprising; a processor; a computer memory coupled to said processor; at least one computer application model stored in said computer memory; and a navigation planner stored in said computer memory; wherein when said navigation planner receives a problem statement, said navigation planner accesses said at least one computer application model to create a plan of solving said problem statement and executes said plan.

11.   (Original)   A computer system as in claim 10, wherein when said plan fails, said navigation planner creates a new and different plan to solve said problem statement.

12.   (Previously presented)   A computer system computer application model generator, said computer system comprising:

a processor;

a fingerprinter;

a recorder; and

a user interface;

wherein said fingerprinter selects at least one region and/or pattern of the screens of the presentation space of a computer application to be captured such that said at least one region and/or pattern of each screen is unique;

wherein said recorder records in said computer memory a knowledge base which comprises each screen of the presentation layer of a computer application, the keystrokes

and/or programs necessary to each screen, a fingerprint of each screen, the available actions

from each screen and the effect of any actions available in each screen through navigating

said computer application in said user interface;

wherein additional relationships between said screen and said knowledge base can be

input through said user interface such that said computer application model generator can

model said computer application.

13.   (Cancelled)

14.   (Original) A method of uniquely identifying the screens of the presentation

layer of a computer application comprising the steps of: taking a screen capture of each

screen of the presentation layer of a computer application; selecting areas of said screen

captures to be examined for the presence of an attribute in said area; and creating a decision

tree such that each of said screen captures has a unique end node of said decision tree.

15.   (Original) A method as in claim 14, wherein said areas are selected

automatically.

16.   (Original) A method as in claim 14, wherein said areas are selected manually.

17.   (Original) A method as in claim 14, wherein said decision tree is created

manually.

18.   (Currently amended) A method as in claim 14 further comprising: of

recording the states of a computer application comprising the steps of: accessing said

computer application; navigating said computer application; and recording in a knowledge base each screen of the presentation layer of said computer application, keystrokes and/or programs necessary to reach each state of each screen of said computer application, the states of each screen, <u>available actions from each screen</u> and the effect of any actions taken on each screen.

19.   (Original) A method as in claim 18, wherein said computer application is navigated automatically.

20.   (Original) A method as in claim 18, wherein said computer application is navigated manually.

21.   (Currently amended) A method ~~of planning a solution to a problem statement~~ comprising<u>:</u> ~~the steps of:~~ receiving a problem statement at a computer system<u>, the problem statement specifying at least one goal</u>; accessing at least one computer application model that encapsulates information on how at least one computer application <u>operates;</u> ~~is controlled and/or data is accessed;~~ <u>using a navigation planner in combination with the computer application model to plan</u> ~~planning~~ at least one path through said at least one computer application that will achieve the <u>at least one</u> goal of said problem statement; and executing said at least one path.

22.   (Previously presented)   A method of modeling computer applications comprising the steps of: taking a screen capture of each screen of the presentation layer of a computer application; selecting areas of said screen captures to be examined for the presence of an attribute in said area; creating a decision tree such that each of said screen captures has a unique end node of said decision tree; accessing said computer application; navigating said computer application; and recording in a knowledge base each screen of the presentation layer of said computer application, keystrokes and/or programs necessary to reach each state of each screen of said computer application, the states of each screen, and the effect of any actions taken on each screen.

23.   (Previously presented) A method as in claim 22, further comprising the steps of: allowing a user to insert additional relationships and commands into said knowledge base.

24.   (Previously presented) A system for navigating an application comprising:
a processor;

a computer memory coupled to the processor;

a screen fingerprinter stored in said computer memory, wherein said fingerprinter comprises a decision tree that selects at least one region and/or pattern of screens of the presentation space of a computer application to be captured such that an occurrence of the at least one region and/or pattern enables the decision tree to uniquely identify each of the screens;

a recorder stored in the computer memory, the recorder recording a knowledge base which comprises the plurality of screen captures, one or more inputs and/or programs necessary to reach the application states indicated by each of the screen captures, one or more

actions available from each of the states, and the effects of undertaking each of the actions

available from each of the states; and

a navigation planner that receives a problem statement, creates a plan of solving the

problem statement by using the knowledge base, and executes the plan,

wherein the creating of the plan by the navigation planner comprises the navigation

planner dynamically analyzing a current screen to determine a current state, determining a

desired state associated with the problem statement, and dynamically identifying a sequence

of the actions from the current state need to achieve the desired state.

2.   Authorization for this examiner's amendment was fax transmitted on May 10,

2007 from applicant's attorney, David M. O'Neill.

Reasons for Allowance

3.   Claims 1-12, 14-24 are allowed.

4.   The following is an examiner's statement of reasons for allowance:

The cited prior art taken alone or in combination fails to teach the claims

invention of models that encapsulate information on how remote applications are

controlled and data is accessed and created to be used by a runtime agent that

intelligently reasons out goal-oriented plans and executes tasks to solve problem

statements generated by a user interface or other software agents. Among other

features, the process involves storing the capturing of sections of screen presentations

for each other computer system representing a specific state, keystrokes that are

required to reach each state, information on how to recognize each screen in the

presentation layer, the available actions from each state, and the related effect while

navigating other computer systems in the user interface wherein such data is unique.

An intelligent agent generates an optimized path to a desired end state of the other

computer based on user inputs and displays the output in the intelligent agent's user

interface.

The closest prior art (Okerlund et al., USPN 6,690,371) teaches obtaining

relevant image data extraction from a medical image data volume. Volume rendering

(VR) is a preferred choice for visualizing a volume of medical image data. The VR

process is governed by a set of curves, namely opacity and color/intensity curves.

These curves determine what contribution and color intensity a given voxel (a data point

within the volume) will have in the resultant 3D projection or rendering. The challenge is

to determine an appropriate curve to accentuate important information (such as by

providing contrast enhanced vessels, for example) for study while suppressing

irrelevant information to the study (for example, scanner table and bone structures in a

study of vessels). Volume clipping or cut planes also can be used to remove portions of

a volume that are not of interest and that would otherwise obscure or occlude relevant

tissue or anatomy. For example, volume clipping can be used to cut away an image of

a rib to get an unobscured sagital view of an aorta. Okerlund teaches an interactive

volume rendering.

In relation to the independent claims of the invention, the applicant differentiates

from Okerflund by definitions recorded in the specification at least in the following ways:

Claims 1, 12, : A screen fingerprinter that captures sections of each screen of

the presentation space from a computer system and stores the captured screen

sections in a computer memory so that the captured section of each screen is unique

(Specification, page 10, lines 3-7). Fingerprinting relies on matching pattern and region

information to terminal screens, based on a decision tree. The patterns are special

conditions that evaluate a terminal screen by looking for features, for example text

strings, dates, times and character attributes such as color. Each feature can be

searched for in several ways including exact position matches, region matches,

exclusion, substring matches and so on. A pattern is captured and can be compared to

a string to return a true or false for a match or can be evaluated more generally, for

example, is there a data (regardless of what date) in a particular portion of the screen.

The patterns can be evaluated as logical expressions. The values returned are used to

navigate the decision tree (Specification, page 18, lines 14-22).

Claim 5: The system includes a recorder to record in at least one file for each

other computer system each state of the presentation layer of each other computer

system each state of the presentation layer of each other computer system. In addition,

the recorder stores those keystrokes that are needed to reach each state, how to

recognize each screen in the presentation layer, the available actions from each state

and the effect of any actions available in each state through navigating the other

computer systems in the user interface (all computer systems are viewed from a

common or one user intrerface). Recorder generates a model that can be used by an

intelligent agent and such model can be embedded in an intelligent agent. As a result,

the processor generates an intelligent agent that includes a user interface

(Specification, page 11, lines 4-14). The intelligent agent generates an optimized path

to a desired end state of the other computer systems based on user inputs in the

intelligent agent's user interface each time the intelligent agent is run. The intelligent

agent executes the optimized path by accessing each other company system as

necessary, retrieving output from the other computer systems and displaying the output

in the intelligent agent's user interface (Specification, page 10, lines 8-13).

Claims 10, 21: A computer system navigation planner comprises a processor, a

computer memory, and a user interface. A fingerprinter in the computer memory

captures sections of each screen of the presentation space from at least one other

computer system. The captured screen is stored in the computer memory in files for

each other computer system so that the captured section of each screen in each of said

files is unique (Specification, page 11, lines 1-6). Above comments of Claim 1 apply.

Claim 14: Above comments on fingerprinter apply. The decision tree used for the

fingerprinting schema uses a region and pattern combination for each node. As the first

node of the decision tree is traversed, the pattern for the node is evaluated; if the

pattern is false, then the next node of the decision tree is traversed. If the pattern for

the first node is true, then the region for the node is evaluated, and the result is stored

as a fingerpring "element." The node of the tree that the screen matched and the

element that was stored are the fingerprint of the screen (specification, page 19, lines 7-

12).

Claim 22: The above comments on fingerprinting and decision tree apply.

Claim 24: All of the above comments apply.

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany

the issue fee. Such submissions should be clearly labeled "Comments on Statement of

Reasons for Allowance."

Correspondence Information

Any inquiry concerning this information or related to the subject disclosure

should be directed to the Primary Examiner, Joseph P. Hirl, whose telephone number is

(571) 272-3685. The Examiner can be reached on Monday – Thursday from 6:00 a.m.

to 4:30 p.m.

As detailed in MPEP 502.03, communications via Internet e-mail are at the

discretion of the applicant. Without a written authorization by applicant recorded in the

applicant's file, the USPTO will not respond via e-mail to any Internet correspondence

which contains information subject to the confidentiality requirement as set forth in 35

U.S.C. 122. A paper copy of such correspondence will be placed in the appropriate

patent application. The following is an example authorization which may be used by the

applicant:

> Notwithstanding the lack of security with Internet Communications, I hereby authorize the USPTO
> to communicate with me concerning any subject matter related to the instant application by e-
> mail. I understand that a copy of such communications related to formal submissions will be
> made of record in the applications file.

If attempts to reach the Examiner by telephone are unsuccessful, the

Examiner's supervisor, David R. Vincent can be reached at (571) 272-3080.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

Hand delivered to:

Receptionist,

Customer Service Window,

Randolph Building,

401 Dulany Street,

Alexandria, Virginia 22313,

(located on the first floor of the south side of the Randolph Building);

or faxed to:

(571) 273-8300 (for formal communications intended for entry.

Information regarding the status of an application may be obtained from the

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have any questions on access to Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll free).

Joseph P. Hirl
Primary Examiner
May 10, 2007